New data on the rare African fruit bat *Scotonycteris ophiodon* Pohle, 1943

By W. Bergmans

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Introduction

When visiting the Laboratoire de Zoologie of the University of Brazzaville in the People's Republic of Congo, in December 1972, I had an opportunity to study the fruit bats in the zoological collections. The greater part of this collection will be dealt with later, but it was thought useful meanwhile to draw attention to two new finds of the poorly known fruit bat *Scotonycteris ophiodon* Pohle, 1943, that were encountered here. Hitherto the species was known from seven specimens, and the present examples add considerably to our knowledge of the taxonomy and distribution of the species.

I am aware that, due to the short and improvised character of my stay at Brazzaville, my observations are not as complete as would be desirable. The impossibility at the time to dispose of the adequate literature on the subject particularly meant a serious handicap.

The following abbreviations have been used to indicate museums and collections: BMNH - British Museum (Natural History), London; BONN - Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn; UBRA - Laboratoire de Zoologie, Université de Brazzaville, Brazzaville; YPM - Yale Peabody Museum of Natural History, New Haven; ZMB - Zoologisches Museum, Berlin.

Material and descriptions

Two specimens, captured on the 13th of March, 1972, at Dimonika (4°14' S, 12°26' E), People's Republic of Congo, registration numbers 8-♂-72-03-13 and 9-♀-72-03-13, both in the collection of the Laboratoire de Zoologie of the University of Brazzaville. (Some doubt exists about the implicit rightness of the sex identifications as included in the registration numbers). The specimens consist of skulls and dry skins with folded wings.

The following notes apply to the colouration in both specimens. The white patch on the muzzle, from behind the nose to in between the anterior eye corners, is conspicuous, as are the white patches immediately behind — and probably about as big as — the eyes. Faint whitish tufts of hair could be observed at the base of anterior and posterior ear margins. The lips are bordered by a rather broad zone of whitish hairs, decreasing in density towards the nostrils. Quite broad zones of dark brown hairs surround the eyes but for the posterior side, where the white patch touches the eye. Very narrow zones of dark brown hairs border the white muzzle patch, the white patches behind the eyes and the dorsal and caudal margins of the white moustache. In specimen UBRA 8-♂-72-03-13 this dark brown bordering of the facial white markings is better developed than in the other specimen. The colours of the rest of the fur did not differ from the description given by Rosevaer (1965). The skin of nose,

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Measurements in mm of adult and subadult specimens of *Scotonycteris ophiodon* Pohle, 1943

Measurements from other than UBRA specimens have been taken from the original publications

Specimen	YPM 9442	BMNH 46.229	BONN 562	BONN 196	BONN 211	NMB 50051	UBRA 8-♂-72-03-13	UBRA 9-♀-72-03-13
Sex		♀	♀	♂	♀	♀	? ♂	? ♀
Age		adult	subadult	adult	adult	subadult	adult	adult
Locality	Liberia	Oda Ghana	Mueli Cameroon	Malende Cameroon	Malende Camercon	Bipindi Cameroon	Dimonika Congo	Dimonika Congo
Forearm length	73.8	76	73.5	74.6	77.8	75	87.6	82.4
Total skull length	—	36		38.2	40.2	± 36	43.3	—
Rostrum length	9.6	10				9.2	16.0	—
Palatal length							25.3	—
Mandible length	29.5	26.5	27.9	29.0	30.3	26.5	33.1	31.3
Cranium breadth	—	15	15.4	16	16.3	16	17.0	16.1
Interorbital breadth	7.2	7	6.8	7.2	7.7	6.4	7.7	7.0
Postorbital breadth			8	7.8	7.8	8.9	7.2	8.3
Zygomatic breadth	—	22.5	22.5	24.4	—	21	27.3	—
$C^1 — C^1$	7.8	7.5	8.2	8.3	9.4	6.7		
$C^1 — M^1$	11.9	12	13	13.5	13.5	11.9	15.0	13.8
$M^1 — M^1$	13.4	12	13.2	13.8	15.0	12.6	17.2	14.2
$C_1 — M_2$			14.7	14.9	15.0	13.5	16.9	15.9

ears, wing membranes and tail membrane appeared to be dark brown, but this may be an artefact (HAYMAN 1946).

The skulls and forearms of both specimens were measured (see table). The anterior part of the skull of specimen UBRA 9-♀-72-03-13 was lacking and one of the zygomatic arches was damaged. In neither of the two specimens the palatal skin was preserved.

Dimonika, where both specimens came from, is situated in an area with low mountains covered with degraded high forest. The Congolese in the region do not distinguish between the various species of fruit bats that occur in the region, and know them in general for their foraging in fruit tree plantations. Among the fruit bats from Dimonika in the studied collection there was also a specimen of *Scotonycteris zenkeri* Matschie, 1894 (UBRA 1-♂-70-03-10).

Discussion

The present specimens were considered full-grown by the broad setting of their teeth and by the absence of a perceptible braincase deflection. From the skins the sex could not be determined any more, and observed mistakes in sex identification in other bats in the same collection prevent me from accepting without reservation the sex as written on the original labels.

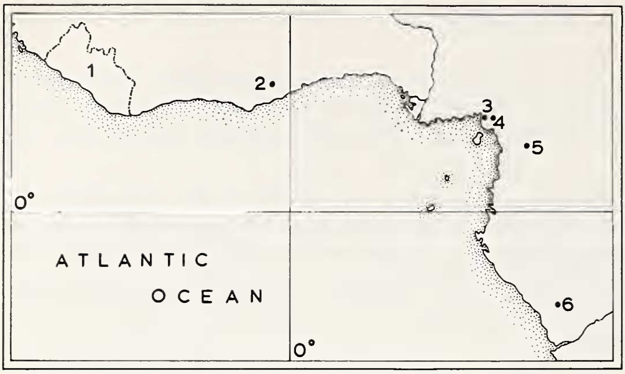
The fur colour pattern in the Congo specimens agrees with that in the specimens from Oda, Ghana (HAYMAN 1946) and from Mueli and Malende, Cameroon (EISENTRAUT 1959). The colour of the type of the species, from Bipindi, Cameroon, appears to be quite aberrant (POHLE 1943), the white patches behind the eyes and the whitish eartufts being absent, while, on the other hand, the white muzzle patch is distinct.

POHLE himself emphasized that an exact description of the various colours of the type would be senseless, since the specimen had been in alcohol for 44 years. EISENTRAUT (1959) dealing with three other Cameroon specimens which do have white cheek patches and ear tufts, takes it that the aberrant colouration of the type indeed could be due to fading, though he does not exclude the possibility of colour variation within the species.

After the type had been described, six other specimens of *Scotonycteris ophiodon* came to knowledge, all collected at sites west of the type locality. The Congo specimens are the first records that, parting from the type locality, extend the known distribution area rather far (more than 800 km) into a predominantly southern direction (see fig.).

The fact that these specimens match EISENTRAUT's Cameroon specimens in colours makes it the more likely that the type specimen lost some of its original colour markings. The observation of only a white muzzle patch in the type could even be influenced by the fact that this patch contrasts most with its surroundings, provided that the dark brown bordering of the white markings, as described here for the Congo specimens, was also present in the type.

In cranial and forearm measurements the Congo specimens differ substantially from most of the known specimens from other regions. Specimen UBRA 9-♀-72-03-13, with an estimated total skull length of 40 mm, has skull measurements comparable to those of the biggest specimen hitherto known, an adult female from Malende (BONN 211), but its forearm length is 82.4 mm against 77.8 mm in the Malende specimen. Specimen UBRA 8-♂-72-03-13, with a total skull length of 43.3 mm and a forearm length of 87.6 mm, surpasses all other specimens in size. (Comparing the rostrum length, measured from the anterior tip of the nasalia to the anterior part of the orbit margin, in this specimen, to rostrum lengths given for other specimens, some doubt



Collecting localities of *Scotonycteris ophiodon* Pohle, 1943.

1. Liberia		
2. Oda	05°55' N	00°56' W
3. Mueli	04°23' N	09°07' E
4. Malende	04°20' N	09°27' E
5. Bipindi	03°06' N	10°30' E
6. Dimonika	04°14' S	12°26' E

about my correct reading of this measurement seems justified.)

Too few specimens of *Scotonycteris ophiodon* are known to speculate about the essence of the observed size differences. As in the other fruit bats inhabiting these regions there is presumably a considerable size variation within the species, but a clinal variation in size may exist as well.

The position of the upper molars in the Congo specimens reminded me of the situation in the eastern examples of *Scotonycteris zenkeri*, where the upper molars are placed more to the rear, and seem to have bigger dimensions, than in specimens from the western regions (Bergmans, Bellier and Vissault 1973), but by lack of comparison material this observation could not be checked.

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Summary

Two additional examples of the rare African fruit bat *Scotonycteris ophiodon* Pohle, 1943, are described and discussed. By this new record the known size range and the known geographical range of the species are largely extended.

Zusammenfassung

Neue Daten über den seltenen afrikanischen Flughund Scotonycteris ophiodon Pohle, 1943

Zwei neue Funde des seltenen Afrikanischen Flughundes *Scotonycteris ophiodon* Pohle, 1943, werden beschrieben und diskutiert. Die bekannte Variation in der Größe dieser Art, wie auch das bekannte Verbreitungsgebiet, werden damit beide erheblich erweitert.

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New systematics and the classification of Old World *Hipparion*

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The ideas of the New Systematics (Huxley 1940) are presently generally applied in the classification of recent birds and mammals. The recognition, at the beginning of the century, of the polytypic species greatly simplified classification and facilitated inferences as to the interrelationships of the species. Geneticists early emphasized the fact that species are composed of populations (Dobzhansky 1937), of which no two are identical in their genetic and morphological make-up, due to initial differences in the frequency of genes and local differentiation, but between which similarities tend to be preserved because of initial qualitative genetic similarities and genotypic buffering, migration and marginal interbreeding. In some branches of classification, especially the classification of birds, the typologically defined, monotypic species had already then been demolished, and emphasize had been laid on the subspecies and the local populations of species. Mayr (1942) discusses at length the concept of the polytypic species as reflecting a population thinking in systematics.

The modern systematist uses samples drawn from populations for description and comparison of populations in and between species. Often quantitative methods are used to measure the range of variation in, and for statistical comparison of, samples. The type, earlier the main or only basis for characterization of the species, is considered just a name-bearer, but otherwise no more characteristic of the species than any other specimen from the sample, since in animals which reproduce sexually no two individuals, except identical twins, are exactly alike, and no individual can be more typical of the species than any other. In addition to morphological characters, features of physiology, ethology, geographical occurrence etc. are important in comparisons. In short, the pigeon-holing of species of the Old Systematics has given way to a biological evaluation of the species of the New Systematics. This tema has, since Mayr's important work of 1942, repeatedly been discussed (Mayr 1943, 1949, 1958, 1963; Mayr, Linsley and Usinger 1953; Simpson 1943, 1951, 1961), as has the application of the New Systematics in paleontology (Arkell and Moy-Thomas 1940; Jepsen, Mayr and Simpson [edits.] 1949; Newell 1948; Simpson 1943; Sylvester-Bradley 1951; Sylvester-Bradley [edit.] 1956). The systematists taking part in the discussion have almost unanimously agreed to discard the static, typological species-concept in favor of a concept of a dynamically evolving species, which consists of local populations, each with their own gene pool, intergrading with neighbouring populations.

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